No. 8300026

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

North American Plant Breeders

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT ...TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT ...T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'AP 420'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 27th *day of* January *in the year of our Lord one thousand nine hundred and* eighty-four.

Attest:

Kenneth A. Evans

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R Block

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0005

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S)
North American Plant Breeders

2. TEMPORARY DESIGNATION

3. VARIETY NAME
AP 420

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*
5201 Johnson Drive
P.O. Box 2955
Mission, Kansas 66205

5. PHONE *(Include area code)*
(913) 384-4940

FOR OFFICIAL USE ONLY

PVPO NUMBER
8300026

6. GENUS AND SPECIES NAME
Glycine max

7. FAMILY NAME *(Botanical)*
Leguminosae

FILING
DATE 11/26/82
TIME 1:00 ☐ A.M. ☒ P.M.

8. KIND NAME
Soybean

9. DATE OF DETERMINATION
January 1975

FEES RECEIVED
AMOUNT FOR FILING
$ 1,000
DATE 11/26/82
AMOUNT FOR CERTIFICATE
$ 500.00
DATE 1/4/84

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Partnership

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Mr. Giles E. Dixon
North American Plant Breeders
P. O. Box 2955
Mission, KS 66201

Dr. Wayne R. Ellingson 515 232-0691
North American Plant Breeders
R.R. 2, Hwy 30 East
Ames, IA 50010

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*

b. ☒ Exhibit B, Novelty Statement

c. ☒ Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*

d. ☐ Exhibit D, Additional Description of the Variety

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)*
☐ Yes *(If "Yes," answer items 16 and 17 below)* ☒ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ Yes ☐ No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ Foundation ☐ Registered ☐ Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT
Wayne Ellingson
DATE 11/8/82

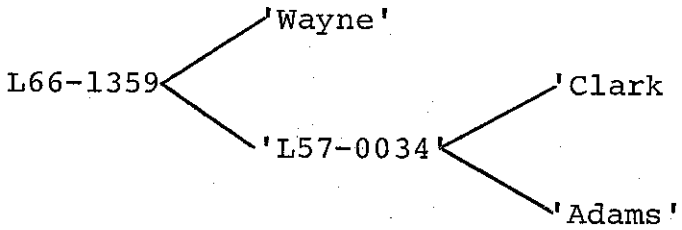
SIGNATURE OF APPLICANT
DATE 11-22-82

FORM LMGS-470 (9-81) (Edition of 1-78 is obsolete)

"EXHIBIT A"

Origin and Breeding History of 'AP 420'

1. AP 420 originated in Iowa from a hand pollinated cross of 'Amsoy 71' x 'L66-1359'. L66-1359 was derived as follows:



The cross was made during the summer of 1972. The F_1 and F_3 generations were grown in a Puerto Rico winter nursery during the winter of 1972-73 and 1973-74. The F_2 and F_4 generations were grown in Iowa in 1973 and 1974. Early generations were advanced using a modified single seed descent technique. Single plants of the cross were selected and planted in Iowa during the summer of 1975. AP 420 was F_4 derived.

2. In 1978, single plants of the variety were reselected and grown in progeny rows in 1979. Only rows conforming to a standard were harvested and bulked.

The genetic make-up of the variety was stabilized in the fifth generation (1974). The variety has remained stable and the sole purpose for reselection was for beginning multiplication for commercial seed stock production. The variety is essentially not changed, but only mixtures removed that have occurred during the two years of yield trials.

3. AP 420 has been in yield trials since 1977. Ordinarily it would have entered tests in 1976, but due to budget constraints, we held the variety in cold storage that year. See attached for 1977-81 data. AP 420 has only been tested under one experimental designation, EX 9031.

4. Discernible variants are not an inherent component of the variety.

"EXHIBIT A"

NNS 9031 - 75

NOTE 'AP 420' = EX 9031
pjs

A. Summary

- Group IV (slightly later than Cutler 71)
- Average standability
- Excellent emergence score (1.0)*
- Excellent shattering resistance (1.0)*
- Average PRR (3.2)*
- White flowers
- Gray pubescence
- Buff Hilum
- Green hypocotyle color
- Shiny seed coat luster
- Medium seed size (2440 seed/pound)

Variety	Maturity	Height	Lodging*	1980 Average (NAPB) Wide Row	1980 Average (NAPB) Narrow Row	Overall Average 1979-1980	% Controls
'AP 420' = EX 9031	10-04	51	3.0	47.2	44.0	48.6	104
Williams	10-01	44	3.1	47.8	48.3	47.4	102
Cutler 71	10-02	46	3.9	-	-	-	-
Mitchell	10-06	48	3.6	43.7	46.9	45.9	98

1981 NAPB Data Summary

Variety	Maturity	Height	Lodging	Wide Row
EX 9031 'AP 420'	9-24	45	3.0	49.2
Williams 79	9-19	39	2.1	48.7
Union	9-24	45	3.2	47.7
Mitchell	9-30	40	2.9	51.0
Franklin	9-28	42	3.0	46.2

B. NAPB - Yield by Location - Wide Rows (30 inch)

Variety	1977 Carrollton MO	1978 Fillmore IL	1978 Peoria IL	1979 Carrollton MO	1979 Salem IL	1979 Texico IL	1979 Washington IA	1980 Tuscola IL	1980 Indianapolis IN 1	1980 Indianapolis IN 2	1980 Carrollton MO 1	1980 Carrollton MO 2	1980 Washington IN 1	1980 Washington IN 2
'AP 420' = EX 9031	48.7	27.3	40.7	69.2	46.3	50.3	48.2	42.6	58.7	57.6	42.5	50.6	43.8	35.7
Cumberland								41.7	49.9	54.4	44.0	47.8	43.2	35.1
Williams	46.9	24.4	42.9	60.3	46.5	35.8	42.6	46.4	51.7	51.6	45.8	54.1	41.6	43.3
Cutler 71				58.7	40.2	40.7	37.4							
Mitchell				56.9	48.5	48.5	43.4	36.9	51.8	45.5	46.0	49.3	42.4	34.0
LSD (.05)		4.8	2.8	8.0	5.5	7.2	6.2	4.4	6.2	6.9	5.3	4.3	7.2	5.5
Mean		21.4	38.5	61.8	41.9	40.5	43.1	43.4	53.4	50.1	43.6	48.2	44.8	33.3

Scored on a 1-5 basis, 1=best

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NOTE:
'AP 420' = EX 9031 R/S

B. NAPB - Yield by Location - Wide Rows (30 inch) - continued

Variety	1981 Mexico MO	1981 Chester IL	1981 Carrollton MO	1981 Payson IL
'AP 420' = EX 9031	51.7	42.0	55.3	47.9
Williams 79	46.7	45.5	56.8	45.9
Union	52.1	43.1	52.2	43.4
Mitchell	44.9	46.0	61.2	51.9
Franklin	47.8	42.9	55.3	38.7
LSD (.05)	7.8	7.2	8.7	9.5
Mean	48.9	40.2	56.2	45.8

C. NAPB - Yield by Location - Narrow Rows (7½ inch)

	Carrollton MO	
Variety	1	2
'AP 420' = EX 9031	50.9	40.1
Cumberland	41.3	39.2
Williams	49.5	47.0
Cutler 71	-	-
Mitchell	46.4	47.4
LSD (.05)	7.3	6.4
Mean	44.6	41.9

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D. University Trials - 1981

	University of Missouri					
Variety	Fairfax	Spickard	Greenly	Marshall	Columbia	Weldon Springs
'AP420' = EX 9031	57.1	44.8	43.2	42.3	49.0	44.8
Williams 79	52.2	48.9	37.7	40.3	47.8	42.0
Union	51.2	51.9	41.8	43.1	46.8	42.0
AP 350	54.5	48.2	45.2	42.2	48.8	42.7
Franklin	-	-	-	38.5	43.5	37.6
Mitchell	52.0	54.3	42.8	41.1	49.6	42.0
LSD (.05)	5.7	6.0	8.5	4.9	5.6	5.9
Mean	52.9	46.6	41.8	43.5	46.4	41.9

NOTE: 'AP 420' = EX 9031

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"EXHIBIT B"

Novelty is based on the unique combination of the following characters:

'AP 420' is most similar to the soybean vareity 'AP 350'. However, AP 420 differs from AP 350 in flower color, pod color and hilum color.

1. AP 420 has white flowers where AP 350 has purple.

2. AP 420 has tan pod color where AP 350 has brown.

3. AP 420 has buff hilum color where AP 350 has imperfect black.

FORM GR-470-2
(6-15-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN *(GLYCINE MAX)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
North American Plant Breeders

ADDRESS *(Street and No., or R.F.D. No.; City, State, and ZIP Code)*
5201 Johnson Drive
P.O. Box 2955
Mission, KS 66205

FOR OFFICIAL USE ONLY

PVPO NUMBER
8300026

VARIETY NAME OR TEMPORARY DESIGNATION
AP 420

Place the appropriate number that describes the varietal character of this variety in the boxes below.

1. SEED SHAPE: [1] 1 = SPHERICAL 2 = SPHERICAL FLATTENED 3 = ELONGATE 4 = OTHER *(Specify)*

2. SEED COAT COLOR: [1] 1 = YELLOW 2 = GREEN 3 = BROWN 4 = BLACK 5 = OTHER *(Specify)* ____ **SHADE:** [2] 1 = LIGHT 2 = MEDIUM 3 = DARK

3. SEED COAT LUSTER: [2] 1 = DULL 2 = SHINY

4. SEED SIZE [1][8] GRAMS PER 100 SEEDS

5. HILUM COLOR: [1] 1 = BUFF 2 = YELLOW 3 = BROWN 4 = GRAY 5 = IMPERFECT BLACK 6 = BLACK 7 = OTHER *(Specify)* ____ **SHADE:** [3] 1 = LIGHT 2 = MEDIUM 3 = DARK

6. COTYLEDON COLOR: [1] 1 = YELLOW 2 = GREEN

7. LEAFLET SIZE *(See Reverse)*: [3] 1 = SMALL 2 = MEDIUM 3 = LARGE

8. LEAFLET SHAPE: [1] 1 = OVATE 2 = OBLONG 3 = LANCEOLATE 4 = ELLIPTICAL 5 = OTHER *(Specify)* ____

9. LEAF COLOR *(See reverse)*: [3] 1 = LIGHT GREEN 2 = MEDIUM GREEN 3 = DARK GREEN

10. FLOWER COLOR: [1] 1 = WHITE 2 = PURPLE 3 = OTHER *(Specify)* ____

11. POD COLOR: [1] 1 = TAN 2 = BROWN 3 = BLACK

12. POD SET: [1] 1 = SCATTERED 2 = CONCENTRATED

13. PLANT PUBESCENCE COLOR: [1] 1 = GRAY 2 = BROWN 3 = OTHER *(Specify)* ____ **SHADE:** [2] 1 = LIGHT 2 = MEDIUM 3 = DARK

14. PLANT TYPES *(See Reverse)*: [3] 1 = SLENDER 2 = BUSHY 3 = INTERMEDIATE

15. PLANT HABIT: [2] 1 = DETERMINATE 2 = INDETERMINATE 3 = OTHER *(Specify)* ____

16. HYPOCOTYL COLOR: [1] 1 = GREEN 2 = PURPLE

17. SEED PROTEIN: Not Required [ ] 1 = A 2 = B

18. NUMBER OF DAYS TO FLOWERING *(Place a zero in first box (e.g. [0][9]) when days are 9 or less.)* [6][1]

19. MATURITY GROUP: [6] 1 = 00 2 = 0 3 = I 4 = II 5 = III 6 = IV 7 = V 8 = VI 9 = VII 10 = VIII

20. SIZE OF 10 DAY OLD SEEDLING GROWN UNDER CONSTANT LIGHT *(Growth Chamber)* **AT 25° C.** *(Place a zero in first box (e.g. [0][2]) when size is 9 mm. or less.)* Not Required

[ ][ ][ ] MM. LENGTH OF SEEDLING [ ][ ] MM. LENGTH OF COTYLEDON [ ][ ] MM. WIDTH OF COTYLEDON

21. DISEASE: *(Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)*

[0] BACTERIAL PUSTULE	[0] SOYBEAN CYST	[0] DOWNY MILDEW	[0] PURPLE STAIN	[0] POD AND STEM BLIGHT	[0] ROOT KNOT
[0] FROGEYE	[0] STEM CANKER	[2] PHYTOPHTHORA R1	[0] BROWN STEM ROT	[0] TARGET SPOT	[0] BROWN SPOT
[0] BUD BLIGHT	[0] WILDFIRE	[0] RHIZOCTONIA ROT	[ ] OTHER *(Specify)* ____		

FORM GR-470-2 (REVERSE)

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22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant shape	AP 350	Petiole angle	AP 350
Leaf shape	SLOAN	Seed size	AP 350
Leaf color	TC137	Seed shape	Co-op 500
Leaf surface	Amsoy 71	Seedling pigmentation	Williams

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY:

VARIETY	NO. OF DAYS TO MATURITY	LODGING SCORE	PLANT HEIGHT	LEAF SIZE		CONTENT		AVERAGE NO. OF PODS PER PLANT	IODINE NO.
				Width	Length	Protein	Oil		
Submitted	141	3.0	45	9.4	12.1	39.1	18.0 %	35	ND
Name of similar variety AP 350	140	2.4	41	9.3	12.3	36.4	18.4	34	ND

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for completing this form:

1. Scott, Walter O. and Samuel R. Aldrich, 1970, Modern Soybean Production, The Farmer Quarterly.
2. Norman, A. G., 1963, The Soybean: Genetics, Breeding, Physiology, Nutrition, Management.
3. McKie, J. W., and K. L. Anderson, 1970, The Soybean Book.

LEAF COLOR: Nickerson's or any recognized color fan may be used to determine the leaf color of the described variety. The following Soybean varieties may be used as a guide to identify the colors listed on the form.

COLOR	VARIETY
Light Green	"Ada"
Medium Green	"Wilkin"
Dark Green	"Swift"

LEAF SIZE: The following varieties may be used as a guide to identify the relative size leaves.

SIZE	VARIETY
Small	"Amsoy"
Medium	"Bonus"
Large	"Anoka"

PLANT TYPE: The following varieties may be used as a guide to identify the plant type.

TYPE	VARIETY
Slender	"Vansoy"
Intermediate	"Wirth"
Bushy	"Adelphia"